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Atrosynnema, a new hyphomycete from dead branches in China

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Abstract — *Atrosynnema digitosporum* gen. & sp. nov., collected on dead branches in Hainan Province, China, is described and illustrated. It has black synnematous conidiomata, integrated unbranched conidiophores, and monoblastic conidiogenous cells that produce brown, obclavate, dictyoseptate, rostrate conidia often with a mucilaginous cap around the apex.

Key words — conidial fungi, taxonomy

Introduction

Many new genera or species of saprobic darkly pigmented hyphomycetes continue to be discovered (e.g., Castañeda Ruíz et al. 2009, 2012, Cruz et al. 2012, Ma et al. 2014, Xia et al. 2014a,b). Hainan Province is considered an important reservoir of biodiversity, but its mycobiota is poorly known. We collected a fungus from dead branches that showed clear differences from all previously described asexual genera and is therefore described herein as a new genus (Ellis 1971, 1976; Subramanian 1971; Matsushima 1975, 1983, 1985, 1989, 1993, 1995; Carmichael et al. 1980; Castañeda-Ruiz 1986; Castañeda-Ruiz & Kendrick 1990a, b, 1991; Wu & Zhuang 2005; Seifert et al. 2011).

Samples were processed, examined and photographed following the methods described in Xia et al. (2014a). Adobe Photoshop 7.0 was used to process photographs into compound images and to modify backgrounds for esthetic reasons. Attempts were made to culture the species from single spores, but they did not germinate. Specimens are deposited in the Herbarium of the Department of Plant Pathology, Shandong Agricultural University, Taian,

China (HSAUP), and Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China (HMAS).

Atrosynnema J.W. Xia, X.G. Zhang & Z. Li, **gen. nov.**

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Differs from *Dictyospiropes* by synnematous conidiomata and monoblastic conidiogenous cells.

Type Species: *Atrosynnema digitosporum* J.W. Xia et al.

Etymology: *atro-* black, dark color; *-synnema* referring to the synnematous conidiomata.

Asexual fungus. Colonies on the natural substrate effuse, brown. Mycelium immersed and superficial, of branched, septate, brown, smooth hyphae. Conidiomata synnematous, unbranched, erect, with black stipes. Conidiophores integrated, erect, unbranched, septate, black. Conidiogenous cells monoblastic, integrated, black. Conidial secession schizolytic, with broad scars. Conidia solitary, dry, brown, smooth, dictyoseptate, obclavate, rostrate.

Atrosynnema digitosporum J.W. Xia, X.G. Zhang & Z. Li, **sp. nov.** Fig. 1

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Differs from *Dictyospiropes ziziphi* by synnematous conidiomata and monoblastic conidiogenous cells, producing smaller conidia with apexes often surrounded by a globose mucilaginous cap.

Type: China, Hainan Province: Wuzhishan, dead branches of unidentified broadleaf tree, 22 Apr. 2015, J.W. Xia (**Holotype**, HSAUP H6651; **isotype**, HMAS 245596).

Etymology: *digito-* finger-like rows or branches;, *-sporum* referring to the conidia.

Colonies on the natural substrate effuse, brown. Mycelium immersed and superficial, of branched, septate, brown, smooth, 2–4 µm wide hyphae. Conidiomata synnematous, unbranched, erect, black, up to 350 µm long, up to 65 µm wide in the broadest part. Conidiophores integrated, erect, unbranched, septate, black, 6–10 µm wide. Conidiogenous cells monoblastic, cylindrical, integrated, black. Conidial secession schizolytic. Conidia solitary, dry, brown, smooth, dictyoseptate, obclavate, rostrate, 65–80 × 12–15.5 µm, apex often surrounded by a globose mucilaginous tunica.

Comments – *Atrosynnema* resembles *Dictyospiropes* M.B. Ellis, but *Dictyospiropes* species have individual, polyblastic conidiogenous cells that produce obclavate, dictyosporous conidia without mucilaginous apexes (Ellis 1976).

In conidial shape, *A. digitosporum* is most similar to *Dictyospiropes ziziphi* M.B. Ellis, but the conidia of *D. ziziphi* are larger, up to 140 µm long and 23 µm wide in the broadest part (Ellis 1976).

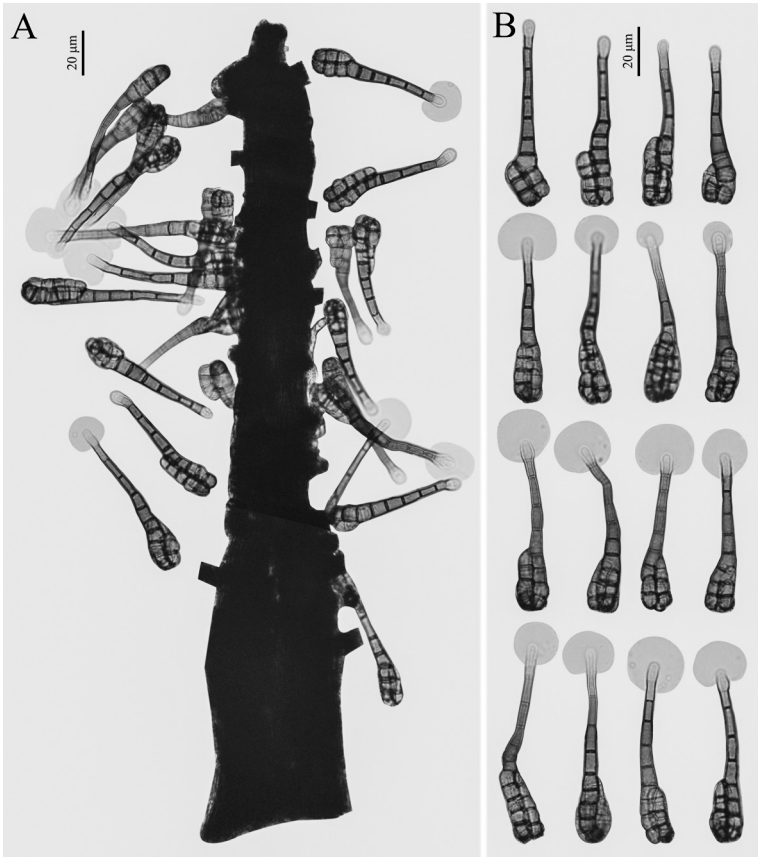

Fig. 1. *Atrosynnema digitosporum.* (ex holotype, HSAUP H6651): A. synnema, conidiophores, conidiogenous cells, and conidia; B. conidia.

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